

## REMARKS

Applicant's counsel thanks the Examiner for the careful consideration given the application and for the courteous telephone interview conducted on July 2, 2010 between applicant's undersigned counsel and Examiner Marx. During the telephone interview, applicant's counsel indicated that applicant intended to submit a new main claim as now set forth as amended claim 20; the Examiner believed that this claim would be examinable in that it was not too much of a change from the previously submitted claims. Applicant's counsel also indicated that applicant intended to submit a Declaration of Unexpected Results; the Examiner stated that she looked forward to seeing the Declaration.

Claim 20 has now been amended to more clearly define the invention. The principal feature of claim 20 is the step of adding previously isolated pediocin A to the feed; this is described in the specification at page 3 lines 20-27; page 5 lines 2-4; page 5 line 32-page 6 line 1. New claim 29 finds support at page 7 lines 26-28; new claim 30 finds support at page 12 line 17; new claim 31 finds support at page 5 line 32-page 6 line 1 and page 7 lines 3-6.

Applicant is attaching hereto a Declaration of Andrea Piva, who is a co-inventor of the above-referenced U.S. Patent Application No. 10/551,536; he is also a majority owner of AVIP S.r.L., the assignee of the above-referenced Application No. 10/551,536. The Declaration explains at Paragraph 7 as follows: A key feature of the present application is that previously isolated Pediocin A is added to animal feed, which is then fed to an animal such as a swine or poultry. Pediocin A is a protein which is produced by the bacteria *Pediococcus pentosaceus* FBB61. Normally, it is expected that proteins such as Pediocin A would be degraded in the stomach of an animal, due to the low PH of the stomach and protease activity in the stomach. Because Pediocin A would be expected to be degraded in the stomach, it would not be expected to have any beneficial effects on the animal, since it would be degraded before it could reach the small and/or large intestines, where it could be active. However, it has been found that Pediocin A, when added to animal feed which is fed to an animal, surprisingly and unexpectedly increases the growth rate and provides significant beneficial effects on the growth of the animal.

The Piva Declaration then discusses three studies which were performed on poultry and piglets. The first study is described in Paragraphs 8 and 9 of the Declaration. Paragraph 10 states that,

in summary, surprisingly and unexpectedly, the addition of Pediocin A to the feed resulted in increased growth rate and improved growth performance for the broilers involved in the study.

The second study is described in Paragraph 11 of the Declaration. At the end of the paragraph, it states that, surprisingly and unexpectedly, the poultry which were fed feed supplemented with a combination of pediocin A and its producer strain *Pediococcus pentosaceus* FBB61 had increased growth rate and improved growth performance.

Paragraph 12 of the Declaration describes a third study carried out on piglets. The diets fed to the piglets were the same except that the diet of the Bac+ piglets contained pediocin A while the diet of the Bac- piglets did not contain pediocin A. The results of the piglet study are summarized at the bottom of paragraph 12, which states: "Surprisingly and unexpectedly, this piglet study showed that the addition of pediocin A to animal feed resulted in increased growth rate of the piglets. The results of the piglet study are surprising and unexpected, because it would be expected that the pediocin A protein would be degraded in the stomach and not be available to produce any growth enhancing benefits to the piglet."

In summary, claim 20 as now presented includes the key feature of adding previously isolated pediocin A to the feed and feeding the feed to swine or poultry. The attached Piva Declaration convincingly establishes that the invention has produced very surprising and unexpected results. Normally, it is expected that a protein such as pediocin A will be degraded in the stomach and not be available to be utilized in the small and/or large intestines. However, as shown in the studies mentioned, the addition of pediocin A to the feed surprisingly and unexpectedly resulted in increased growth rate of the animals. As the law states, if the invention produces surprising and/or unexpected results, the invention is patentable.

Since the attached Declaration establishes the surprising and unexpected results of the present invention, it is clear that the claims as now presented are in condition for allowance, which is respectfully requested.

If any further fees are required by this communication, please charge such fees to our Deposit Account No. 16-0820, Order No. HOFF-38826.

Respectfully submitted,  
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